

# PATENT COOPERATION TREATY

TRANSLATION

From the  
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing **See form PCT/ISA/210**  
(day/month/year)

Applicant's or agent's file reference

**B6158PCT**

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

**PCT/FR2004/050584**

International filing date (day/month/year)

**12.11.2004**

Priority date (day/month/year)

**25.11.2003**

International Patent Classification (IPC) or both national classification and IPC

**F04B43/04, F15C5/00, B81B3/00**

Applicant

**STMICROELECTRONICS SA**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EP

Authorized officer

Facsimile No.

Telephone No.

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Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
<b>1. Statement</b>			
Novelty (N)	Claims	<u>7, 8</u>	YES
	Claims	<u>1-6, 9</u>	NO
Inventive step (IS)	Claims	<u>7, 8</u>	YES
	Claims	<u>1-6, 9</u>	NO
Industrial applicability (IA)	Claims	<u>1-9</u>	YES
	Claims	<u>none</u>	NO
<b>2. Citations and explanations:</b>			
<b>Concerning point V.</b>			
<p>1. Reference is made to the following documents:</p> <p style="margin-left: 40px;">D1: US 6 106 245 A (CABUZ CLEOPATRA) 22 August 2000 (2000-08-22)</p>			
<p>2. INDEPENDENT CLAIM 1</p>			
<p>2.1 The present application fails to comply with the requirements of PCT article 33(1) since the subject matter of claim 1 does not fulfil the criterion of novelty defined in PCT Article 33(2). Document D1 describes (see figures 1 and 2; the references in parentheses apply to this document):</p> <p style="margin-left: 40px;">Pump comprising:</p> <p style="margin-left: 40px;">a cavity (29) formed in an insulating substrate (21), the top part of the substrate located in proximity to the cavity constituting an edge,</p> <p style="margin-left: 40px;">a conductive layer (25) covering the inside of the cavity up to the edge and possibly covering the edge,</p> <p style="margin-left: 40px;">a flexible membrane (23), composed of a conductive material, placed over the cavity (29) and resting</p>			

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on the edge,  
a dielectric layer (27) covering the conductive layer or the membrane (27) so as to insulate the portions of the conductive layer and the membrane that are close to each other,  
at least one ventilation duct (43) formed in the insulating substrate (21) that opens into the cavity through an opening (43) in the conductive layer, and  
terminals (39, 41) for applying a voltage between the conductive layer (23) and the membrane (25).

3 INDEPENDENT CLAIM 9

3.1 The present application fails to comply with the requirements of PCT Article 33(1) since the subject matter of claim 9 does not satisfy the criterion of novelty defined in PCT Article 33(2).

Document D1 describes (see figure 5; the references in parentheses apply to this document):

Method for operating a pump according to claim 3, wherein a voltage is applied at regular or irregular intervals between said terminals (39, 41).

4 DEPENDENT CLAIMS 2-6

The claims do not contain any features which, combined with the features of any claim to which they refer, satisfy the requirements of the PCT with regard to novelty and inventive step (PCT Article 33 (2) and (3)).

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citations and explanations supporting such statement

5 INDEPENDENT CLAIM 7

5.1 Document D1, which is considered to represent the most relevant prior art, describes (see column 5, lines 7-28; the references in parentheses apply to this document) a method for producing a pump, from which the subject matter of independent claim 7 differs in that:

the production method is carried out by forming and eliminating a sacrificial layer.

5.1.1 The subject matter of claim 7 is therefore novel (PCT Article 33(2)).

The problem to be solved by the present invention may be considered as having a method that can also be also applied to an element for an integrated circuit.

5.1.2 The solution to this problem proposed in claim 7 of the present application is considered to involve an inventive step (PCT Article 33(3), for the following reasons:

there is no reference in D1 to an application in the field of integrated circuits.

5.1.3 Claim 8 depends on claim 7 and therefore also satisfies, as such, the requirements of the PCT with regard to novelty and inventive step.